1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



105 sepulture. There is a weird, formal mourning for dead matrons, and suggestions of fear of or veneration for the manes.

172 Seriland is surrounded with prehistoric works, telling of a numerous population who successfully controlled the scant waters for irrigation, built villages and temples and fortresses, cultivated crops, kept domestic animals, and manufactured superior fictile and textile wares; but (save possibly in one spot) these records of aboriginal culture cease at the borders of Seriland. In their stead a few slightly worn pebbles and bits of pottery are found here and there, deeply embedded in the soil and weathered as by the suns of ages. There are also a few cairns of cobbles marking the burial places, and at least one cobble mound of striking dimensions but of unknown meaning; and there are a few shell-mounds, one so broad and high as to form a cape in the slowly transgressing shoreline (Punta Antigualla), and in which the protolithic implements and other relics are alike from the house-dotted surface to the tide level, 90 feet below.

The absence of relics of a superior culture, and the presence of Seri relics throughout deposits of high antiquity, suggest that the tribe is indigenous to Seriland; and this indication harmonizes with the peculiar isolation of the territory, the lowly culture and warlike habits of the people, the essentially distinct language, the singular marriage custom, and the local character of the beast-gods. And all these features combine to mark the Seri as children of the soil, or autochthones.

## Recent Explorations and Surveys

114 Present knowledge of Seriland and its inhabitants is based primarily
121 on the work of two expeditions by the Bureau of American Ethnology,
[122] conducted in 1894 and 1895, respectively; and, secondarily, on researches into the cartography and literature (descriptive, historical, and scientific) of the region. Both of the expeditions were projected largely for the purpose of making collections among little-known native tribes in the interests of the National Museum, and the general ethnologic inquiries were ancillary to this purpose.

The 1894 expedition was directed chiefly toward work among the Papago Indians in the vaguely defined territory known as Papagueria, lying south of Gila river and west of the Sierra Madre in southwestern Arizona and western Sonora (Mexico). Outfitting at Tucson early
[122] in October, the party moved southward, visiting the known Papago rancherias and seeking others, and thus defining the eastern limits of the Papago country. On the approach to the southern limits of the tribal range toward Rio Sonora, the evil repute of the Seri Indians sounded larger and larger, suggesting the desirability of scientific study of the tribe; and it was decided to attempt investigation. Accordingly the party was reorganized at Hermosillo, and, with the
114 sanction of the Secretary of State and Acting Governor, Señor Don Ramón Corral, proceeded to Rancho San Francisco de Costa Rica,

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



where a temporary Seri rancheria was found occupied by about sixty of the tribe, including subchief Mashém, who speaks Spanish. In this part of the work the expedition was accompanied by Señor Pascual Encinas, the owner of the rancho visited, and doubtless the best informed white man concerning the habits, customs, personnel, and habitat of the tribe. About a week was spent in intercourse with the occupants of the rancheria, when the studies were brought to an end through the illness of Señor Encinas, and the consequent necessity for return to Hermosillo. The expedition then proceeded northwestward and northward along a route so laid as to define the western limits of Papagueria proper, and reached Tucson near the end of the year. In addition to the leader, the party comprised Mr William Dinwiddie, photographer; José Lewis, Papago interpreter, and E. P. Cunningham, teamster. The outfit was furnished chiefly by Mr J. M. Berger, of San Xavier (near Tucson). On the visit to the Seri frontier the party was accompanied by Señor Encinas, Don Arturo Alvemar-Leon (who acted as Spanish interpreter), and two or three attachés of Molino del Encinas.[1]

The second expedition was directed primarily toward investigation of the Seri, and only incidentally to continuation of the researches among the Papago. Outfitting at Tucson in October (again with the aid of Mr Berger), the expedition proceeded southward by a route different from those previously traversed, and carried forward a plane-table route survey covering a considerable zone from the international boundary at Sasabe to Rio Sonóra. Descending the previously unmapped course of Rio Bacuache, the expedition reached the Rancho de San Francisco de Costa Rica on December 1, 1895, and, although conditions were found unfavorable in that the Seri were on the warpath, immediately prepared for the extension of the work into Seriland.

A preliminary trip was made into the mainland portion of the Seri habitat, terminating at the crest of Johnson peak, the highest point in Sierra Seri. The triangulation and topographic surveys were carried over the territory traversed, and several points were fixed on Isla Tiburon; but the natives, agitated by a skirmish with vaqueros on the frontier a day or two earlier, had withdrawn to remoter parts of the territory, and were not encountered. The party returned to Costa Rica, a rude boat was completed, transported across the desert via Pozo Escalante to Embarcadero Andrade, and launched in Bahia Kunkaak. The surveys were extended to the southern portion of Sierra Seri and Isla Tasajo, and, after various difficulties and delays due to dearth of fresh water, to gales, and to other causes, the party (enlarged for the purpose) finally landed on Tiburon. Many Seri rancherias were found on

[1] The more noteworthy details of the organization and work of the two expeditions are set forth in the administrative reports of the Bureau for the fiscal years 1894-95 and 1895-96. Certain members of this party are shown in the accompanying half tone, forming plate II: Señor Encinas seated at the end of the table; his son, Don Manuel (bareheaded), and Don Ygnacio Lozania at his right, a grandson behind him, and Señor Alvemar-Leon seated at his left, with Mashém kneeling over the table in the foreground.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



teeth (such as that of Jesus Omada) passed from mouth to mouth until—incredible as it may seem—the more timid Sonorenses stood in greater dread of these natural weapons of the Seri than of their brutal clubs and swift-thrown missiles, or even of their poisoned arrows; while traditions of cannibalism came up and received such general credence that the current items of Seri outrages, both in local gossip and in the Mexican and American press, customarily recounted savage butcheries ending with gruesome feastings on the raw or slightly cooked flesh of the victims. The shuddering antipathy felt for the perpetrators of these inhumanities even a thousand miles away increased toward their frontier, as light toward its source; the dread was deepened by the failure of punitive expeditions sent out again and again only to be balked by waterless sand-wastes or wrecking tiderips; and in 1894 and 1895, at least, the horror of the Seri was a daily and nightly incubus on half the citizens of Hermosillo and the tributary pueblos and ranchos, and a thorn in the flesh of the state officials.

The external history of the Seri since the spring of 1894 is fairly known, both through the direct researches and through press reports, and would seem to be typical. This era may be assumed to open with the arrival on Tiburon's shores of the sloop *Examiner*, carrying two San Francisco newspaper writers, Robinson and Logan, with two assistants, Clark and Cowell. The to-have-been-expected happened duly, save that two of the party escaped, and on reaching Guaymas advertised the disaster through correspondence and the press. Several of the accounts indicated that the two victims were not only slain but eaten, and various plans were laid in California, Arizona, and Sonora for the recovery of the bones[1]—as if, forsooth, the omniverous and strong-toothed Seri spared anything save scattered teeth and split sections of the longer shafts of skeletons the size of those of *Homo sapiens*. While in Guaymas the two survivors set up claims for indemnity, which initiated international correspondence and inquiry into the details of the affair. These details are indicated, in sufficient fulness for present purposes, in a formal communication incorporated in the international correspondence, viz:

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
*Washington, December 14, 1894.*

SIR: Early in November I visited the Seri tribe of Indians, inhabiting Tiburon Island in the Gulf of California and an area of several thousand square miles of the adjacent mainland in Sonora, Mexico. The visit was for the purpose of making collections under your authority as Secretary of the Smithsonian Institution; but I availed myself of the opportunity for obtaining additional information relating to the customs, habits, and history of the tribe. In addition to my own party I was accompanied by Señor Pascual Encinas, a prominent citizen of Hermosillo, and

[1] A number of Californians and Arizonians, especially M. M. Rice, of Phœnix, intimated a strong desire to join the 1895 expedition of the Bureau of American Ethnology for the express purpose of personally ascertaining the fate and seeking the remains of Robinson, who was extensively known in southern California and southwestern Arizona.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



614 earlier paragraphs (pp. 164–169); these symbols evidently represent an
[302] exclusively maternal organization into clans consecrated to solo tutelaries. The tutelaries, or totems, together with the clan names and all personal designations connected with the totems, are highly esoteric, and were not ascertained save in the few cases mentioned above.[1]

593 It should be observed that the identification of kindred by the alien observer is difficult and somewhat uncertain, since the relationships recognized in Seri society are not equivalent to those customary among Caucasians. It was found especially difficult to identify the husband
[582] of the jacal, partly because he is commonly incongruously younger (and hence relatively smaller) than the mistress, and partly because of the undignified position of outer guard into which he is forced by the tribal etiquette. Moreover, his connection with the house is veiled by the absence of authority over both children and domestic affairs, though he exercises such authority freely (within the customary limits) in the
[842] jacales of his female relatives. There is, indeed, some question as to the clear recognition of paternity; certainly the females have no term
601 for "my father", i. e., the term is the same as that for "my mother", *em*, though the males distinguish the maternal ancestor by a suffixed syllable (*e-m*="my father"; *e-ta* or *ĕ-tak*="my mother"), which seems to be a magnificative or an intensificative element. It is noteworthy that the kinship terminology is strikingly meager; also that while the records suggest various significant points, the material is hardly rich enough to warrant complete synthesis of the consanguineal system.

421 While the burden of the more permanent property pertains to the women, there is a decided differentiation of labor with a concomitant vesting of certain property in the warriors—the distinctively masculine chattels comprising arrows, quivers, bows, turtle-harpoons, etc. There are indications that the balsas, too, are regarded as masculine property. The impermanent possessions—water, food, etc—seem to be the common property of men, women, and children, except in so far as the
[264] right is regulated by regimentation; for the privileges of eating and drinking are enjoyed in the order of seniority. In the reckoning of
554 seniority, the chief (who is comonly such in virtue of his position as
602 nominal elder brother of a prolific dame) ranks first, and is followed by other warriors in an order affected in an undetermined way by conjugal relations as well as by their prowess or sagacity (the equivalents of age in primitive philosophy) down to an undetermined point—apparently fixed by puberty; then comes the clanmother, followed by her daughters in the order of nominal age, which is affected by the status of spouses and the number of living offspring; finally come the children, practically in the order of their strength (which also is deemed an equivalent of age), though the girls—especially those

[121] [1] The chief object of the 1895 expedition was to pursue the inquiries concerning social organization, totems, etc; but, as mentioned elsewhere, this object was defeated by the troublous history of the tribe during the earlier part of 1895, and the consequent revival and intensification of their animosity toward aliens.

2: Kroeber E-5 (1930) 1931 NU31 Seri NU31

[p.3]

# THE SERI

By A. L. Kroeber, *University of California*

## Introduction

The present paper is the first product of field studies made between January and March, 1930, in Arizona, Sonora, and Sinaloa, under a joint expedition of the Southwest Museum, Los Angeles, and the University of California. The financial contribution of the University was the gift of Mrs. Ethel W. Crocker. While the purpose of the trip was to define rather than solve problems, the following pages contain part of the positive observations obtained.

The Seri, who live on Tiburon Island, Sonora, in the Gulf of California, are often considered the wildest and most primitive tribe surviving in North America. They owe this repute partly to McGee's monograph about them, in the Seventeenth Annual Report of the Bureau of American Ethnology. It is easy to read between the lines of this description that McGee leaned toward a romantic and imaginative interpretation of the Seri. Also, his actual contacts with the people themselves were brief, and hampered by imperfect communication. Moreover, the Seri have been for three hundred years in contact with Spaniards and Mexicans, part of the time even under direct mission control. It therefore seems doubtful whether their backwardness could be the result wholly of preserved primitiveness, and may not rather be attributable to a recalcitrant degeneration. In order to answer this question, and to place Seri culture at least tentatively among the other tribal cultures of the Southwest instead of leaving it as an unexplained and lurid abnormality, a brief visit to them was undertaken.

The success of this visit was due wholly to Sr. Roberto Thomson of Hermosillo and Rancho San Rafael, who is now the Mexican Government's *Jefe de Vigilancia* for the Seris, and in effect what in the United States would be known as Indian Agent for the tribe. He has protected and befriended them, kept them in turn in bounds, and secured some governmental assistance for them, under which they are making a beginning of adaptation to the modern world. At any rate, the mutual raidings and killings have stopped, and the Seri, though still very suspicious of most of the neighboring settlers and of strangers, look upon Sr. Thomson as their protector and friend. Without his introduction and experience, many less data could have been collected in a longer stay.

The Seri now live wholly on Tiburon Island. I was with them six days, half of them on the island. This is about as long a time as McGee spent with them—all of it at the cattle ranch of Costa Rica. McGee also explored the island and its camps at some length, but without encountering any Seri, who eluded his party.

Inasmuch as Mr. Edward H. Davis of Mesa Grande, California, has three times visited Tiburon to form an ethnological collection for the Museum of the American Indian, Heye Foundation, I attempted no examination of Seri material or economic culture, which Mr.

2: Kroeber E-5 (1930)1931 NU31 Seri NU31



Davis has had fuller opportunity to investigate, but confined my attention to the social and religious sides of their life. There was the more reason for this since it is in dealing with these latter aspects, where verbal communications are as important as observation, that McGee's monograph is most tenuous and dubious. I also secured linguistic notes for the preliminary placing of the curious tonal speech of the Seri.

Seri culture in its present form is a fragmentary thing such as could hardly have existed under purely native conditions. Religion especially has suffered, no doubt under Christian influence, without many elements of Christianity having been taken over in exchange. Of mythology, only tatters seem to remain; of ritual, little more; only shamanism seems to be fairly well preserved. Nor, beyond the Spanish names for God and the cross, do the Seri give evidence of being or having been Catholics. The result is that they seem remarkably religionless. I do not know of a native people that appears so free from superstition and so unspiritual in its attitudes. Possibly I conferred with the wrong informants; but those I talked with seemed unsecretive. Social culture is better preserved, as is evident from a set of kinship terms that are numerous, precise, and untouched by Spanish concepts. On the other hand, there is little formal social organization. Whether this is also the result of a loss, is hard to say. The Seri may never have had sibs or clans; but the fact that they appear to lack them now is no positive evidence that they were without them three centuries ago. Shifts of residence, contraction of territory, shrinkage of numbers, amalgamation of distinct bands, may well have obliterated much of such social fabric as they once possessed. Games and the calendar are wholly native and intact, but taboos connected with sex, age, food, and the like seem fewer than among the backward tribes of the southwestern United States. It seems reasonable to construe this condition as the result of varyingly hostile, parasitic, and missionizing Spanish-Mexican contacts; especially when one realizes how overwhelmingly, though also spottily, this influence has affected the other tribes of Sonora—the Yaqui, Mayo, Pima, and Opata.

Historically the Seri are not a tribe but the consolidated remnant of a series of dialectically distinct tribes that once held the barren coast of Sonora from Guaymas to Puerto Libertad. Tiburon Island is the stronghold in which the mixed survivors, probably now numbering less than 200, have taken refuge, and, owing to its inaccessibility, drought, and poverty, have succeeded in maintaining themselves and their blended and reduced culture. Toward the interior, it is doubtful if they ranged beyond the present line of the Southern Pacific railroad, if that far. Orozco y Berra indeed assigns them territory up the Sonora River to Ures, on his famous map, which is still basic to all other ethnic maps of Mexico. But from Hermosillo

2: Kroeber E-5 (1930)1931 NU31 Seri NU31



are inconclusive. Some of the outstanding speech similarities and differences are given in a section of the present paper; a fuller presentation will be made in a subsequent classification of the Yuman languages.

The Yuman tribes of the United States are better known, and there are published or collected accounts of the Diegueño, Kamia, Cocopa, Yuma, Mohave, Maricopa-Halchidhoma, Yavapai, Walapai, and Havasupai. These fall into two groups, culturally: the farming tribes of the Colorado (and Gila) bottomlands, and the gathering tribes of the desert and semi-desert of Arizona and southern California, the latter again affiliating with those of northern Baja California, such as the Kiliwa and Akwa'ala-Paipai. As might be expected, it is the desert Yumans of Arizona who show the greater number of resemblances to the Seri and fewest differences.

The Pima as the immediate neighbors of the Seri, and the Opata and Cahita tribes beyond, ought to show many similarities with the Seri, plus differences due to their agriculture and activities like weaving which are normally encouraged by sedentary habits.

Such are some of the indications as to the history of the Seri and their culture, as discussed more in detail below so far as the preliminary data available allow. Further and intensive investigation is obviously needed. On the side of material life, Mr. Davis' studies ought largely to fill the need. For social and spiritual culture, the work will be difficult. It is not that the Seri are unwilling, but that they are inaccessible and hard to communicate with. The obvious procedure would be a study of their speech until it served as a medium. In that way both their language and their culture could be recorded hand in hand. But the obstacles are numerous. The island is thirty miles long by twenty wide. There is not a roof on it. The six summer months are extremely hot, and, along the coast, said to be almost insufferable from gnats and mosquitoes. Most of the few water holes are inland; the Seri live, except during the cactus and mesquite harvest, scattered in small settlements along the shore, often several miles from water. There is no communication across the strait, except by open boat, subject to weather conditions; and then it is twenty miles to the nearest house and a hundred to a town. Life on the island would be both harsh and monotonous to an unusual degree. Nor can the Seri as yet be studied by taking one or two of them to civilization for a prolonged stay. They soon become restless and homesick. Added to all this is the fact that their Spanish, though reasonably fluent in some cases, is ungrammatical, and would hardly serve for securing paradigms or accurate translations of texts; and while able to endure hardships, the people are not accustomed to steady work or mental concentration. The difficulties would not be insuperable, when the destined linguist-ethnologist undertakes the task; but he should not under-rate them.

2; Kroeber E-5 (1930)1931 NU31 Seri NU31



197 174 On the other hand, if the hypothesis were true that the Seri reached their historic habitat from across the Gulf, they would have come from territory which in recent times was Cochimí, and their presumably closest relationship would be with these former neighbors, and only indirectly with the other Yumans. Thus the line of affinity would be Seri-Cochimí-main Yuman.

192 197 It is to test these two alternative hypotheses of Seri origins that the accompanying comparative vocabularies of Seri, Cochimí, Yuma, and Cocopa have been selected. They are limited because the only material pertinent to the problem at issue is stems represented in all three linguistic groups; and both the Seri and Cochimí data are scant. A number of words of the same meaning differ completely in the three groups—in their surface appearance at any rate—and have therefore been omitted as irrelevant. The residue consists of 33 Seri words which show more or less resemblance to the corresponding Cochimí or Yuman words or to both.

[121]

The Seri, Yuma, and Cocopa vocabularies were recorded by myself. Yuma and Cocopa represent distinct branches of Yuman. Cochimí 1 and 2 were recorded or copied respectively by W. M. Gabb in 1867 and by J. R. Bartlett about 1852, and are transcribed from photostat copies of the originals filed in the Bureau of American Ethnology and furnished through the courtesy of its Chief, Mr. Matthew Stirling. Both are entered on Smithsonian printed blanks. The Bartlett vocabulary is designated "from M. Robinia at Guaymas." It may represent a vocabulary taken down by Robinia from a Cochimí and given to Bartlett, or a record made by Bartlett from Sr. Robinia's memory of Cochimí. The words for two and three are identical, even in spelling, with those given by Clavigero. Those for one and man (tejeeg and tama in Clavigero) are different. The Bartlett vocabulary may thus not go back to a single native source.

The relations of the Cochimí dialects are not clear. To judge from the three Lord's prayers given by Clavigero, languages rather than dialects may have been involved. These prayers begin respectively pennayú nakaenamlá, ua-lappá anma-bang miamú, cahai apá amleing miá, and are attributed to latitudes 25°30'-26°, 28°, and 29°-31° in the peninsula. Gabb's entry for "my father" is ka-ai and for "sky" em-bai, which clearly correspond to Clavigero's northern Cochimí cahai (h silent in Spanish, usually a glottal stop) and ambei-ng ("in heaven"). Bartlett's dialect is not so easily identified. His word for father is calemlag, and his sky remains a blank entry. There are a few other identities with Clavigero, besides the numerals mentioned, but they are to words scattered in Clavigero's

2: Kroeber E-5 (1930)1931 NU31 Seri NU31



## SUMMARY AND CONCLUSIONS

121 114 Knowledge of the Seri is still in its infancy. McGee's actual observations are excellent but slender in range. He has interwoven them with conjectures, some of which are erroneous and others unproved and doubtful. Intensive study of the Seri will be difficult, chiefly for physical and practical reasons, but, to judge from such explicit data as are in hand, should prove them to be a tribe unusually interesting indeed, yet fundamentally similar to others in the same region. So many of their known traits are shared with one or another of these tribes, that it is practically precluded that complete investigation will leave the Seri as a unique people or even as one set widely apart, except in their historical fortunes.

13 182 The most distinctive thing about the Seri is their environment. This is extremely arid and lacking in water supply, but not desert in the ordinary, untechnical sense. Botanists describe it as a succulent vegetation desert. It is fairly well stocked with food inland and rich in food along shore. This territory is able to support a fair sized population, but scatters it and keeps it from settling down. The land is also inhospitable and difficult to strangers who are not ready to adopt the Seri mode of life. This fact has helped preserve Seri ethnic integrity and culture to an unusual degree. A considerable fraction of original Serian territory is wholly unoccupied by civilization today, a full three centuries after its frontier was settled. The Indian neighbors of the Seri, all being farmers in fertile valleys, had no more incentive or ability than Caucasians to penetrate Seri territory sustainedly.

171 174 Across the Gulf, the peninsula of California presents a very similar environment, and was inhabited by tribes of very similar subsistence and residential habits, culture level, and temperament. But the Baja Californians differed from the Seri in being so situated, with reference to the rest of the world, that the length of the peninsula cut them off, except in the northern portion, from nearly all outside relations. Each group in the peninsula thus had contacts and stimuli only from others of similar culture. The Seri, on the contrary, having long been surrounded on the landward side by peoples of higher cultural level, were able to exploit this difference, in part by adopting cultural traits from their neighbors; and perhaps still more largely by preying upon them economically; while their habitat afforded them a refuge from destructive reprisals. Such may have been the condition in pre-Columbian days. At any rate it has been such since the coming of the Spaniards, and has made the "history" of the Seri different from that of the Baja Californians.

174 Three islands, Tiburon, San Estefan, and San Lorenzo, form stepping stones from Seri mainland to the peninsula. The water gaps between them are navigable to native craft and have been navigated

2: Kroeber E-5 (1930) 1931 NU31 Seri NU31



farm, but because they have secondarily specialized their culture away from the old Seri-Walapai substratum. 171

The Baja Californians must be reckoned as having participated in the same basal, low-level, desert culture, though of course, like every other people, with certain variants and developments of their own. That we can name fewer Seri traits in their culture than in that of the preceding groups, is probably due to the less store of our knowledge of them. More significant of relationship is the smallness of the number of Seri traits which they are known to lack. It is entirely possible that if there existed adequate information for both sides of the Gulf, Seri and Cochimi similarity would prove to be the closest of all. But at present this possibility cannot be either conclusively proved or disproved.

Seri similarities with southern and even central California are fairly numerous, and can be attributed partly to the common non-agricultural subsistence, which would tend to induce the adoption or retention of similar cultural traits. On the other hand, the basic farming life of the Opata, Mayo, and north Sinaloan peoples must have operated at many points in the opposite direction in spite of their geographical nearness. Pueblo culture is so highly specialized that its mass would expectably show little kinship to Seri, and such is the trend of the available comparative data.

The Seri thus relate culturally to other peoples much as might be anticipated from their geographical position and subsistence opportunities. The Seri problem consequently has to be removed from the category of those which hold out a hope or illusion of being particularly significant for the solution of basic questions or broad hypotheses. It is essentially a problem of specific local ethnography, with wider significances revealable only by impartial comparative studies; but of special interest because of the relatively well-preserved status of parts of old Seri culture and the human appeal of three centuries of outlaw history. The thorough study of this culture will involve much grinding physical hardship and possibly some danger. It is to be hoped that when the work is undertaken, it will not be in a spirit of personal adventure, with emphasis on the external difficulties to be overcome, but with a serious desire and competence to secure facts and understanding. 121

ABBREVIATIONS USED

AA—American Anthropologist. 113
AMNH-AP—American Museum of Natural History, Anthropological Papers. 128
BAE-B—Bureau of American Ethnology, Bulletin.
BAE-R—Bureau of American Ethnology, Reports.
JAFL—Journal of American Folk-Lore.
UC-PAAE—University of California, Publications in American Archaeology and Ethnology.

4:Malkin E-5 (1953-1955) 1956 NU31 Seri NU31

# SERI ETHNOECOLOGY: A PRELIMINARY REPORT[1]

Beryx Malkin

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In this paper I shall attempt to summarize briefly some of the possibilities inherent in ethnoecological studies. Ethnoecologies, published so far, have either stressed only the economic or medicinal uses of animals or have just included them as part and parcel of mythology and religion. The emphasis here, on the other hand, is primarily on the aboriginal knowledge of natural history and naturalistic concepts about animals. A comparison with the actual situation in nature will be frequently made in order to test the acuteness of the native observation.

This account is part of a wider comparative study in ethnoecology of several aboriginal groups. Additional field work has recently been completed among two other tribes, the Cora in Nayarit, Mexico, and the Sumu in northern Nicaragua.

Ethnoecological studies of such scope require much more extensive background in natural history than anthropologists or even zoologists today are likely to have. One has to deal with very diverse groups of animals and I have found my own knowledge of the subject repeatedly inadequate on many occasions. It is hoped that a study of this sort will attract individuals who will cover more satisfactorily the entire range of the animal kingdom.

## Economic Uses

825 262 439

Almost all major classes of animals, with the exception of the insects, are used for food. Only a very limited number of species serve other purposes such as trade with the Mexicans. Among these are various species of large fishes, sea-turtles and a number of shells. None are used for the basic non-dietary products such as utensils, clothing, and other items of the material culture, for these are purchased ready-made in the local Mexican "tiendas" (small general store).

825 [439]

As a major source of income for their livelihood the Seris depend mainly upon a few commercially significant species of large fish and sea-turtles. Yet they do exploit a wide range of the animal environment as a source of additional food. Of the total number of species of animals[2] upon which information has been available, 45% were reported as economically exploited. The table below gives the breakdown of the major groups.

[p.73]

5:Dawson N-5 (1940) 1944 NU31 Seri NU31

DESERT
PLANT LIFE

SIXTEENTH YEAR NUMBER 9

LT. E. YALE DAWSON, A.A.F.
Scripps Institution
La Jolla, California

# SOME ETHNOBOTANICAL NOTES ON THE SERI INDIANS

105 121 If the natural resources of a region may be said to reflect the degree of cultural and social development of its aboriginal people, we may easily understand why the Seris of Sonora, now approaching extinction and with much modified habits and culture, are considered the most primitive and savage of American Indians. Certainly the arid coast of Sonora, destitute [133] of water but for a few widely separated, stagnant holes, with a dry, rocky soil habitable only by the most frugal and thorny of desert vegetation, presents little in the way of resources to a native people. It was, indeed, [262] only along the ocean shore that the Seris found animal food sufficient to sustain them, principally, the sea turtle and the pelican. This food source proved adequate to support a tribe of some 2000 in pre-Columbian times, but the limited habitat of the pelican and turtle brought about extreme isolation of the people. Thirty-mile-long Tiburon Island became their principal home, separated from the mainland by the narrow but tempestuous channel, El Infiernillo, across which they frequently voyaged in their buoyant balsas to search out vegetal supplements to their monotonous sea food diet. It is this use of vegetable materials, not only as food but in other phases of the domestic economy of these people in earlier times, with which these notes are particularly concerned.

225 Primary occupation of the Seris aside from their continual movement to and from the water holes was, necessarily, their search for food, for they cultivated nothing and conserved little. Fish were exceedingly abundant in the waters around their island, but their very limited tool sense, pro- [227] viding them with almost no fishing devices, excluded much of this food from their diet. Clams and other shellfish were to be had, but it was the abundant green sea turtle, feeding upon luxuriant growths of marine grass, *Ruppia maritima*, in the shallow, sandy lagoons along El Infiernillo, that provided their meat staple. The turtles could be captured with ease during egg laying season as they crawled over the beach, but at other times they had to be 396 speared from a watercraft. No sizable timber grows in Seriland and before the advent of flotsam boards and hoop-iron it would have strained the

[89]

# Seri Social Structure (1)

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1. The material presented here was collected on a three-week visit to the Seri zone, the costs of which were defrayed by the I.N.A.H. [Instituto Nacional de Antropología e Historia], for the purpose of planning later investigations. It took place in January, 1952, in the company of Mr. Paul Finninger of M.C.M. [Mexico City College].

121 The permanent system of interacting influences that is presented among the Seri is of great scientific interest for its extreme characteristics of geographic isolation, environmental hostility, poverty, and the small size of the community.

131 The Seri occupy coastal territory in Sonora on the Gulf of California; formerly they covered a territory that toward the end of the 18th century, along the coast extended from Guaymas Bay, including it, to Punta Peñasco and, on the mainland, included the area in the vicinity of the present city of Hermosillo. They have been reduced little by little, now occupying only some isolated points on Cape Tepoca, Desemboque, and Tiburón Island, places from which, in spite of their inclemency, they are also being displaced.

648 Until some 30 years ago, most of the contacts of the Seri with Western culture had been warlike, ferociously defending their skins from the attacks of the yori (Mexican) invaders. Their contacts with the natives have been with the Yaqui, Papago, and those of Santa Rosalía (crossing the gulf). It was not until about 20 years ago, when the establishment of fishing camps was initiated with mestizo capital, that a new orientation in the treatment of the Seri came into being. Existing side by side with them at present are various Mexicans who exploit the products of Seri fishing, and some scientific investigators, principally from the United States.

13 They form enclaves in the heart of Aridamerica, with its cactus, shrubs and grasses, without flowing water, and with abundant flying and, especially, marine fauna:

8: Ascher E-5 (1960) 1962 NU31 Seri NU31

# Ethnography for Archeology: A Case from the Seri Indians[1]

Robert Ascher
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● 121 Any case for close association among the branches of anthropology would surely include weighty arguments developed from comments on the relationship of ethnology and archeology. In one of his last collections of papers A. L. Kroeber (1957: 193) depicts interdependence of the two in terms of ultimate goals:

> It has become clear that in this matter of a reconstruction of the larger and long-range movements or developments in global human culture, the ethnographer or ethnologist needs the help of the archaeologist. The ultimate purposes of the two are the same: to discover the history or evolution of culture; but their instruments and methods are quite different. . . . The two approaches supplement each other so gratifyingly because they approach a common purpose with quite distinct methods.

In certain obvious areas archeology draws on general ethnographic information. The most elementary notions about behavior in ongoing nonindustrial communities form the implicit basis for all thinking about behavior founded on archeological evidence. From the vista of the urban mid-twentieth century, for instance, it would be difficult to imagine what existence was like in communities with but a single occupational specialty if it were not for ethnographies on food-gathering populations. Yet archeologists have expressed doubt concerning the utility of ethnography for archeology. What is the basis for this doubt?

By definition, archeological data consist of the results of human behavior. The initial objective of archeology is to reconstruct behavior from its results. In accomplishing this objective, the archeologist turns to descriptions of behavior and its products, where the products are similar to those which he excavates. Thus, by moving from the results of actions to actions which are known to yield similar results, it becomes possible to make statements about behavior in the absence of direct observation. To operate with this logic in such a way that the behavioral statements based on archeological data are reasonable, the correspondence between the results of observed behavior and archeological data must be high. The principal source for relevant descriptions is thought to be ethnography. Yet it is argued (Kleindienst and Watson 1956: 76) that ethnography is inadequate for archeological purposes because the literature describes either "ideal types without description of range of variation" or detailed material items without behavioral correlates, or because it describes no material items, i.e., no results of behavior.

8: Ascher E-5 (1960) 1962 NU31 Seri NU31



Elsewhere (Ascher 1961) I have disputed this portrayal of the potential of existing ethnography, citing examples where qualitative and quantitative models have been constructed from ethnography and suggesting that one task for archeology is to codify the literature in a manner useful to itself. Regardless of doubts about existing ethnographies for archeological purposes, the worth of future ethnography for archeology will depend on the acquisition of the relevant kinds of information. Although discussion on the subject has been recorded (Tax *et al.* 1953: 229-232), no specific guides have been produced. This paper provides and discusses an example, which can be used as a paradigm, model, or guide of the kind of information to be collected from ongoing communities which would be of general value for archeology. The subject culture is that of the Seri Indians of Sonora, Mexico; the example describes a persistent trait complex associated with fishing for the Pacific green turtle, with particular emphasis on one trait in the complex, the harpoon foreshaft.

## Example from the Seri Indians

The Seri, who numbered approximately 200 individuals in 1960, occupy a band of coastal desert about four miles wide and seventy miles long in the state of Sonora in western Mexico. The band extends along the Gulf of California from Kino Bay in the south to Desemboque in the north, opposite the largest island in the Gulf, Tiburon. Although the region is desert, with an estimated average rainfall of less than eight inches per year, falling mostly in July and August, it is comparatively rich in succulents and small land mammals. The Gulf forms a natural trap for large fish and marine mammals and is a breeding ground for the Pacific green turtle. The scantiness of fresh water has constituted, in the past and present alike, the single crucial limiting factor to agriculture and human occupancy.

In the past the Seri may have comprised from four to six tribal groups, and they were certainly numerically larger, with a maximum estimated population of 2,000 (Kroeber 1931: 53, 30). Until very recently they also occupied Tiburon Island, and at some more remote period they extended south, north, and east over a territory whose bounds are uncertain (Kroeber 1931: 5). On the basis of linguistic change, Kroeber (1931: 54) calculated that the Seri could have inhabited this general region for 1,000 years. It is uncertain whether the original occupation stemmed from Baja California via the Gulf of California or from the north and west via an overland route or routes (Kroeber 1931: 39-51). The first contact with Europeans occurred as early as 1540 (McGee 1898: 51).

In culture content the Seri are most closely affiliated with the Pima (Kroeber 1931: 51), but they do not share the practice of agriculture with them or with their western neighbors. The Seri are primarily fishermen; secondarily they gather the fruits of succulents; and to a still lesser extent they hunt game. McGee (1898: 214)

8: Ascher E-5 (1960) 1962 NU31 Seri NU31



TABLE 1
Foreshaft Specifications

411
184

| Manufacturer | Plate Reference | Approx. Age of Artifact | Length of Hafting (Centimeters) | Length of Point (Centimeters) |
|---|---|---|---|---|
| Ernesto Dias | Ia | 2 | 6.5 | 5.3 |
| José Estorga | Ib | 6 | 6.5 | 5.6 |
| Francisco Garcia | Ic | 4 | 6.5 | 5.8 |
| Alberto Mendez | Id | 5 | 5.8 | 5.7 |
| Ignacio Molina | Ie | 3 | 8.7 | 11.5 |
| Louis Moreno | If | 3 | 7.8 | 4.8 |
| Ramon Perrales | Ig | 3 | 7.0 | 4.4 |
| Francisco Barnett | IIa | 1 | 6.8 | 5.2 |
| | IIb | 2 | 6.4 | 5.3 |
| | IIc | 2 | 6.8 | 5.9 |
| | IId | 2 | 7.3 | 6.1 |
| | IIe | – | 7.7 | 5.8 |
| Miguel Barnett | | 3 | 7.8 | 5.0 |
| | | 3 | 6.0 | 4.9 |
| | | 5 | 6.1 | 4.5 |
| Ernesto Corrales | | 1 | 3.1 | 2.8 |
| (8-year old boy) | | 1 | 3.0 | 4.2 |
| Juan Moreno | | 7 | 6.5 | 5.0 |
| | | 7 | 6.7 | 4.9 |
| | | 8 | 6.7 | 5.2 |
| | | 7 | 6.1 | 5.1 |

cause he did not believe it would help retard death. This man, interestingly enough, is the nephew of Alberto Molina, whom the Seri believe responsible for having introduced the gasket. The foreshaft produced by Ignacio (Plate Ie) is the most divergent one in the entire collection. It is, for example, the only one in which the point has two barbs and, except for those made by the eight-year-old boy, the only one in which the length of the point above the hafting exceeds that of the hafting. The finished products also show some variation in the source of the rubber used for the gasket and in the kind of wood used for the hafting. Six of the eight gaskets are shaped from an automobile tire, two from scraps of rubber of which the men did not recall the source. Three haftings (Plate Ia, d, g) are made of ironwood, all the others of mesquite, which is easier to obtain than suitable ironwood or nonindigenous woods.

[196]

## Discussion

The foregoing example is designed as a paradigm to illustrate how observations on ongoing cultures might be adapted to the problems of archeological reconstruction. It is, of course, imperative to focus on behavior where matter is changed in some way, because it is only in altered matter that behavior is protracted through time. The example is deliberately selected to capitalize on an important area

121 ●

8: Ascher E-5 (1960) 1962 NU31 Seri NU31



[2] of partial overlap between the observational fields of ethnology and archeology. Unlike endeavors which exclusively emphasize those aspects of culture which archeologists cannot learn about (e.g., Thompson 1939), it directs attention toward the archeologically possible.

The analytic unit in the example is the trait complex, with emphasis on persistence and change within it, rather than independent traits and changes in them, which are the kinds of data with which the archeologist often works. Recognition of the relevance of one trait to the other traits in a single complex, or of nonsymmetrical changes in the complex, poses a problem and a challenge for meaningful cultural reconstruction. Though it deals with a common observational field, the example extends that field by providing a series of behavioral linkages, which may conceivably prove useful in the formulation of hypotheses of less restricted scope.

The specific information on fishing and the context in which it occurs can serve as a basis for testing localized hypotheses by analogy. Conceptions about specific phenomena are usually tested by seeking descriptions of cultures which utilize and manipulate their environments in a comparable manner. The fishing complex and its ecological setting are particularly relevant to the archeological interpretation of the New World Archaic and, to a lesser extent, of the Old World Mesolithic.

The quantitative data on similarity and variation among foreshafts, both in the entire collection and in the work of particular individuals as compared with other individuals and with the group as a whole, are of some theoretical value. It is an archeological tenet of major importance that matter altered in accordance with a particular scheme exhibits similarities which allow its grouping into a class. Ideally, such a class should approximate a normal distribution since individual differences, e.g., in manual dexterity, represent variations from a norm or mean. In addition to supporting and amplifying these general notions, the data also confirm the proposition that behavior can be inferred from the quantitative analysis of its results. Thus the four men who independently described the procedure for making a foreshaft agreed that the length of the point determines the length of the hafting, and the finished foreshafts themselves exhibit a constant relationship between the length of the point (as measured from the hafting) and the hafting. More important, such quantitative data, if coupled with similar data from other cultural settings, are capable of being used to develop general statistical models of artifact typology which would facilitate making classifactory decisions based on behavioral realities.

The example provides a feasible guide for the kind of information to be collected from ongoing communities. Feasibility may be measured in two ways: by the amount of time needed to collect the data and by the generality of the guide in terms of the phenomena to which it can be applied. The time required to collect the kind of information indicated is brief in relation to the total time spent by the

8: Ascher E-5 (1960) 1962 NU31 Seri NU31



ethnologist in the field, and, used as a guide, the example can be applied to any behavior in which matter is changed. More investigations similar to that offered here are needed as the archeologist turns to interpretation, conceptualization, and synthesis, or to what Kroeber (1957: 193) has called "the larger and long-range movements or developments in global human culture."

## NOTE

1. I hope it is not too presumptuous to dedicate this paper to the memory of A. L. Kroeber.

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9: Malkin E-5 (1953-1955) 1962 NU31 Seri NU31

# Editorial Comment

● 121 This paper was originally written by Borys Malkin as a thesis in partial fulfillment of the requirements of the degree for Master of Arts in Anthropology at the University of Minnesota, 1960. It has since been 128 edited to verify scientific names and to drop some of the original introductory portions of the manuscript. Unfortunately, because of technical problems involved in reproducing them, the Seri names also had to be dropped.

At the time the manuscript went to press, the author was in South America conducting field work. It was not feasible to send various stages of proof to him for his personal attention, and the editors were not always certain of the appropriate decision.

000 *Seri Ethnozoology* represents an extension of the Idaho State College Museum's previous publishing policy in anthropology. However, its content and its quality are important and fall within our intent to publish items of wide as well as of regional scholarly interest.

E.H.S., B.R.B.

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9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

# I

# INTRODUCTION

The territory discussed in this paper is somewhat larger than the historical area occupied by the Seris. While Seri settlements are limited today to a quite narrow range, the Tiburon Island and the coast of Sonora immediately adjacent to it, they are familiar with a far larger region, owing to their periodic trips, either on their own after fish, turtle and game or, occasionally, in the temporary employ of the Mexican fish-traders and even farmers. The further away from Tiburon perimeter, the lesser their familiarity with a locality.

The area is limited by Hermosillo in the east, Punta Penasco and Porto Libertad in the north, and Nogales in the south, and finally it includes also the coast of Baja California which the Seris sometimes visit. It also includes all of the islands within that area, Tiburon, Patos, Rasa, Angel de la Guarda, San Lorenzo and San Esteban.

With very minor variations this entire region belongs properly to the Sonoran desert. *Palo Verde, Palo Fierro, Pithaya, Mesquite, Cholla, Sahuaro,* prickly pear, elephant tree and creosote bush are the basic plants. Among the vertebrates, such forms as the Sonoran bighorn, deer, cougar, jumping rat, badger, coyote, skunk, rattlesnake, sidewinder and Gila Monster are most conspicuous and diagnostic. Among the birds are the roadrunner, the raven, as well as many pelagic or littoral birds, the pelican and cormorant among them.

The region is one of very low rainfall, limited to the hot summer months, in some places occuring only a few times in a year. Winters are chilly and dry with persistent winds and dust, with the temperature falling down, on rare occasion, to just above the freezing point. Summers are intensely hot, with daily temperatures usually over 100 and the water temperature of the sea along the shore not infrequently as much as 85 degrees. There are great differences between diurnal and nocturnal temperatures, very much influencing the desert life.

Within this region there are several different ecological zones or perhaps sub-zones, varying from the alkaline flats like Playa Noriega, and the alkali-and salt-permeated soils of Desemboque to the more bountiful slopes of the mountains and the irrigated mud-flats around Hermosillo.

For the sake of distinction, I have selected several of the typical localities or zones as a point of reference either because of their ecological distinctions or because of their signficance as a landmark, readily delineating a peculiar habitat. Personally I am familiar only with some of the

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

I

# INTRODUCTION

●121 localities, but I think it is advisable to include others, whose nature is not so different from the main places of Seris' habitations.

361 13 I have selected then 25 localities and I shall give their main characteristics below:

1. **Punta Peñasco** — a village along the upper shores of the Gulf of California, close to the U.S., [491] connected by a paved highway from Gila Bend. Typical Sonoran zone with extensive sand flats. Very rarely visited by the Indians.

2. **Porto Libertad** — rocky shores, located some 30 miles north of Desemboque. A Mexican village frequently visited by the Seris.

3. **Desemboque** — Seris' main settlement after 1940, just north of and around Punto Tepopa, only a few miles from Tiburon. A narrow strip of poor land, thoroughly permeated with alkali and salt. Vegetation is very sparse. The mesquite, elephant bush, creosote bush, *Cholla* and *Sahuaro* are the main trees. No *Palo Verde* or *Palo Fierro. Ocotillios, Sahuaros* and mesquite are stunted and scarce, only toward the mountains increasing in frequency and size. Along the shores, sand dunes [172] with kitchen middens, partly covered by vegetation. An arroyo nearby is empty except on a few occasions during the year when flash flood after rains rushes through. Rainfall very scarce. During the summer of 1953 I spent there, it rained very little—only twice and that was short and feeble. [312] Water is obtained from a well, near which there is a Mexican ranch where, owing to irrigation, some vegetables are grown and weeds are present such as *Datura*. The coast is largely rocky. Narrow beaches lack wide sand bars. Hence the fauna here is poor.

4. **Estero Sargente** — alkali flats and mud flats some 25 km. south of Desemboque along the coast. Vegetation very scarce. *Sahuaros* and *Ocotillios* and other desert trees grow some distance from the shore. Short grasses in some places clump the coastal dunes. Breeding and feeding place of many shore birds, especially of willets and egrets. On the alkali flats near the shore are many peculiar insects, not found in Desemboque, particularly tiger beetles and Oedemerids.

5. **Campo Vivora** — little more than half way down toward Desemboque from Estero Sargente, [103] also along the coast. So named after supposedly numerous rattlesnakes. Clumpy grasses. Favorite encampment of the Seris and others while fishing and hunting turtle. The only loggerhead turtle I have seen was right here.

[491] 6. **Porto Kino** — fishing village directly due east of Hermosillo, nowdays connected with Sonora's

[P. 1 B]

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

13 17. **San Lorenzo Island** — a narrow long island along the coast of Baja, California, and opposite to Tiburon. Altitude up to 1200 feet. Fauna limited, owing to the distance from the mainland. Vegetation much as elsewhere but impoverished. Visited incidentally as is San Esteban.

18. **Angel de la Guarda** — large island along the coast of the peninsula, longer but narrower than [312] Tiburon, slightly lower at its highest point, pretty much waterless. Vegetation as elsewhere, fauna limited. Visited by the Seris very rarely.

19. **Desemboque (Mountains)** — high mountains immediately back of Desemboque, 5 miles away, rising perhaps to 1200 feet. Vegetation much richer than in Desemboque, with giant *Sahuaro* growing to considerable size. More moisture than immediately near the sea-shore. Full Sonoran fauna with cougar and bighorn. Frequently visited during hunts.

20. **Tepopa (Mountains)** — in distinction from Punto Tepopa as a whole, this refers only to the rugged head. The mountain reaching to over 1800 feet. Thus by Punto Tepopa are meant only the shores and the littoral.

21. **Buena Vista** — a ranch inland on the way to [312] Hermosillo, newly deserted. Water present in the large well and periodically in the dry river. Willows, large mesquite, Palo Verde, etc. Now only [361] incidentally visited by the Seris but formerly of some importance as a camp site.

22. **San Francisco de Costa Rica**—a ranch inland halfway between Kino and Hermosillo near the [361] main road, presently a large Mexican ranch. Formerly a frequent Seri campsite. The distinctive feature of this locality is extensive sandy areas with very peculiar fauna.

23. **Hermosillo**—capital of Sonora of some 40,000 people. Extensive agriculture, irrigation, river and water-dammed reservoir and cattle and cotton ranges. Once the Seris ranged almost as far as this [484] town but presently they come here only on special business, to the hospital or for a ride to town, with the Mexican truckers. Their observations in Hermosillo are only incidental.

[484] 24. **Nogales**—U.S.-Mexican frontier town. Seris come here very rarely and only certain individuals. Observations less than incidental.

25. **Campo Utah** — large track of irrigated flat lands given up to cotton, operated by the Utah Construction Company between San Francisco and Hermosillo. Somewhat off the main road. Selected as a distinct region owing to the irrigation and [484] cotton fields with their ecological peculiarities. Seris visit this only in transit or on most unusual [464] occasions when they work a few days for the Mexicans.

**The Problem**

● 121 The basic problem concerns the state of Seris' zoological knowledge, that is the general knowledge of the natural history of animals in its main outlines; of their ecology, habits, reproduc-

[P.2B]

121 tive behaviour, migrations, predation, distribution and the like. Existing ethnographic sources on the Seri barely touched on these matters and 114 such information as is available concerns only 121 a few economically important species and even then concern only the economy and fragments of myths in which animals are involved. This is not surprising. To my knowledge, there is not a single publication in existence dealing with the aboriginal knowledge of natural history as such, certainly not in the North American literature. Much less, yet such an approach had been followed in the standard ethnographies under the heading of "ethnozoology." It has been left to the ethnobotanists (Whiting on the Hopi, Chamberlin on the Gosiute, Robbins *et al.* on the Tewa are the best examples) to attempt something along these lines, but even this is on a limited scale.

121 Since the material for the present study has been obtained with this in mind, it inevitably suffers from the limitations imposed by the outline of the problem. The Seri material has been gathered as one of the series of studies undertaken among the selected Indian tribes (Sumu, Cora and Karajá are others) in order to have comparative material from cultures different in their basic economy and occupying different ecological niches. Thus, an analysis of the Seri material alone further limits the application of it and the conclusion one may draw from it.

The main intent then is to form an orderly and analytical presentation of the material which later may serve for comparison with the analogous material gathered among other tribes.

What then can be done with this type of material and what is the purpose of such work? For this, several different answers can be offered. To begin with, the factual data on the aboriginal knowledge of natural history of animals is sadly neglected. What there is, is fragmentary. Ethnobotanies outnumber ethnozoologies in the North American literature by better than six to one. Thus the present work and also other work I have done along these lines will fill in a gap in our knowledge.

Secondly and more importantly, this work, I believe, suggests a very novel approach toward ethnozoology, the sort of approach so far untried. This sort of systematization of the zoological knowledge among the primitives, makes a comparative approach possible, much as we have comparative studies, for example, of the social organization or of the political systems. In other ways such systematization also makes easier the internal analysis of the material.

Another important angle in this work is an attempt to relate aboriginal natural history knowledge to the general economy and to the natural environment. This is phrased as a question: how does the general economy of the people influence their knowledge of the natural history of animals? Specifically: what is the extent of their knowledge of various animal groups and how does this knowledge increase or decrease relative to their general economic preoccupations? Also: how does the general natural environment, climate espec-

[P. 3A]

•121 ially, limit the possible uses made of different species; how does it limit the knowledge of animals' natural history? How important are animals in their economy?

Such efforts to connect various phases of culture with the environment had long been practiced by archaeologists, but these lessons were largely lost on cultural anthropology, which, at present time, insists on concentrating on the social factors in splendid isolation, either from the natural environment or from the fact that man is a biological organism first and last. However, considerable revival of at least the ecology—stressing studies is quietly taking place in culture anthropology, viz: Kirschoff, Steward, Leonard Mason, to mention only a few of the contemporary students, and, of course, Kroeber and Sauer who stressed this approach long ago. But as Julian Steward (1938:260) points out, cultural and environmental relationships cannot be answered in a blanket, ready-made statement. Each of the ecological determinants must be examined separately as an empirical fact, and this is what I attempted to do. The Seri material alone indicates where the ecology is a limiting factor and to what extent, and where it is not. In the end, such study as I have undertaken should contribute to our understanding of man's relationship to his natural environment and his adaptions to it as well as his ability to escape from it.

Finally, this type of work indirectly suggests another line of questioning. How does human scientific knowledge evolve, and how is it formed? A set of comparative studies of this kind inevitably suggests some patterns in the evolution of men's biological knowledge. In this it may be of much interest to the zoologists or to the historians of biology. For in the knowledge of these simpler people we find our own predecessors historically, sometimes not so far behind us. Some of the Seri concepts are no less developed than those of the earlier Western naturalists, quite on par with the work of the 16th century men like Gesnor or Aldrovandi. In some ways even as superb as naturalist as John Ray who really laid the foundation for systematized natural history was not much ahead of them. As to the question of how such knowledge is formed, the problem is one for a psychologist and here, at best, only the barest suggestion can be found.

These are than some of the problems and questions which this study seeks to answer.

On the other hand there is a great deal that this study cannot do owing to self-imposed limitations, and there is a great deal which it can only hint at or answer in a most fragmentary manner. For example, there is no use to attempt functional analyses of the naturalistic concepts in the Seri culture. To do this, considerable extra field work would have to be done, with just this point in mind. The existing literature, owing to its diverse origins and approach and owing to its fragmentariness, is of little use. Nor can this study answer in a general way how the Seri knowledge of natural history developed. To anwser this adequately one would have to have first, the

121 documentary data and second, also the archaeological data. The subject matter unfortunately [172] is absent from the first. As for the archaeological [114] data, there is none as yet to date for the area except Giffor's unpublished manuscript. Nor have we the kind of ethnography that would be of help—not until ethnographers will pay greater attention to the naturalistic knowledge of the people. Nor can the matter of the Seris' cultural connections be undertaken with the present material with any degree of reliability, simply because no such material exists for the neighboring group.

However, few suggestions outside the limitations and the main object of the present analysis can be made. From the fragmentary data available I shall try to show the change in utilization of animals by the Seris. I think I can also indicate a few points in support or denial of this or that idea of the Seris' cultural connections. I can also suggest the direction of the attitudes toward animals in the Seri culture, in a sphere which normally we assign variously within the domain of religion or world view. I can also indicate some of the major changes in the Seris' exploitation of general environment. All these can be suggested only fragmentarily, as only small bricks toward a generalized structure of our knowledge of the Seri culture. To this extent the present analysis should be helpful to the future student of the Seri culture and to our general understanding of it.

**Procedure**

114 The field work on which this material is based has been done during the summer of 1953, June-September and again for one week in May, 1955. [164] The second visit took place at a most inopportune [166] time, amidst bad measles, dysentery and a flu epidemic which completely disorganized the tribe and persuaded most of them to flee Desemboque into the coastal desert.

The work was accomplished mostly in Desemboque, the Seris' largest and most permanent settlement after 1940 where most of them lived. Occasional side trips were undertaken later to Hermosillo, Estero Sargente, Campo Vivora, Tiburon and some of the other places mostly with the view of evaluating their ecological nature and for the observation and acquisition of the zoological materials not available in Desemboque. These trips had been undertaken in the company of the Seris who then also doubled up as informants.

124 During the first two weeks of my stay in Des- [126] emboque, I did no interviewing but concentrated on the collections of zoological material, occasionally and informally asking for the name of this or that animal. After two weeks regular interviewing work was commenced, first with an aid of Mr. Leo Sandoval, Mexican, U.S.—educated school teacher, but later on entirely without an interpreter. There are sound reasons for this practice. Direct questioning allows the interrogator to evaluate the replies in their less obvious nuances, the reactions of the informant to the question, his hesitations, uncertainties and the like.

In the event of well-known animals with those colloquial Spanish name everybody, Mexican and

121 Another Point in the Procedure is of Par-
amount importance in this type of research. Fair
[129] general knowledge of practical field natural history can have no substitute. The investigator must have this basic knowledge, to realize the range of possibilities in the answers and identify any answers not commensurate with the actual events. This way, even without interest in the mythology, one may get on the track of a myth. Although, in
825 general, anthropologists seem to think that na-
121 tural history knowledge of the primitive folks must be ridden with the mythology and must be different than ours, my rather extensive field work persuaded me that this is not so at all. Mythology there is, if one looks for it. But the bulk of their knowledge is based on sound obervation as anyone acquainted with the natural history will readily discover. One must be able to disentangle the two qualities. That this is so is well indicated in a large number of animals where the informants simply replied to queries on this or that subject in the usual *quien sabe*. And indeed, the more obscure the subject, the more likely one got that sort of an answer.

128 In the analysis of the actual material a certain schematic programme has been followed. For the sake of convenience, material has been grouped according to the major divisions of the animal kingdom. Some may object to this saying that this is just our way of classifying animals but that aboriginal classification does not follow these lines. For certain purposes, this may be true, but for my own purpose I find my procedure more convenient. Regardless of the hypothetical native mode of classification, one may form a question.
128 How do the Seri distinguish different mammals?
825 I may say also that our own groupings are not different from those of the Seri or any other tribes. Their recognition of differences among animals may be at times hazy or from our point of view erroneous. But by and large, birds to them are birds and snakes are snakes and even within the insects, without actually naming differences, they tended to group together insects according to their order. Exceptional cases, bat, whale and the like, remain exceptions just as they were to the early Western naturalists, the 16th century Gesner or Alrovandi, for example, to whom their place in the scheme of nature was based on the analogies. But this didn't prevent these men from grouping other animals much the same as we do. In the same way, the South African Bushmen may regard Mantis as a supreme diety, but this does not prevent them to say that it is also like an insect.

128 The scheme I followed turned out useful. In the end I have obtained generalized ideas on the salient features of natural history of different animal groupings which I could compare with each other. The internal evidence is most interesting, more so that in some details it differs qualitatively and quantitatively from the materials I have gathered among other tribes.

[P. 5 B]

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# SERI BANDS

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ABSTRACT

In previous publications on the Seri, frequent reference to distinct Seri groups points to historical tribal divisions at some level. Recent research among the Seri has determined the former existence of six bands which included three dialect groups. Three of the bands were subdivided into clans. These six bands, whose formation may have been caused largely by internal struggles, were eventually crushed and reduced to a single group by the devastation brought about by external conflict.

## INTRODUCTION

The Seri tribe is located in Mexico along the coast of Sonora between Bahia Kino and Puerto Libertad, and on Tiburon Island (Fig. 1). Today it consists of approximately two hundred and eighty persons who call themselves *kongkaak*[1] "the people." Although at one time it was comprised of six distinct bands (Fig. 2), the tribe has now lost its band organization. However, much of the late history of these now-defunct tribal units remains vivid in the minds of the Seri. The purpose of this paper is to present some of the salient features of these former bands, to discuss certain interrelations between them, and to recount the Seri version of the disintegration of the band system.[2]

Three published studies on the Seri should be mentioned.[3] Of these, the reports by Kroeber and by Griffen are the more reliable. All three investigators mention tribal divisions which Griffen rightly designates as bands.

## BANDS

BAND I *xika ʔai kkoii* "they who live toward the true wind"

This group is commonly referred to in the literature as the Tepoca or Salinero. As shown on Fig. 1, they inhabited an area which extended from a point slightly north of Puerto Lobos to Punta Tepopa on the south. The territory extended inland, encompassing the general area delimited by the San Ignacio River.